Trend Study 10R-7-00

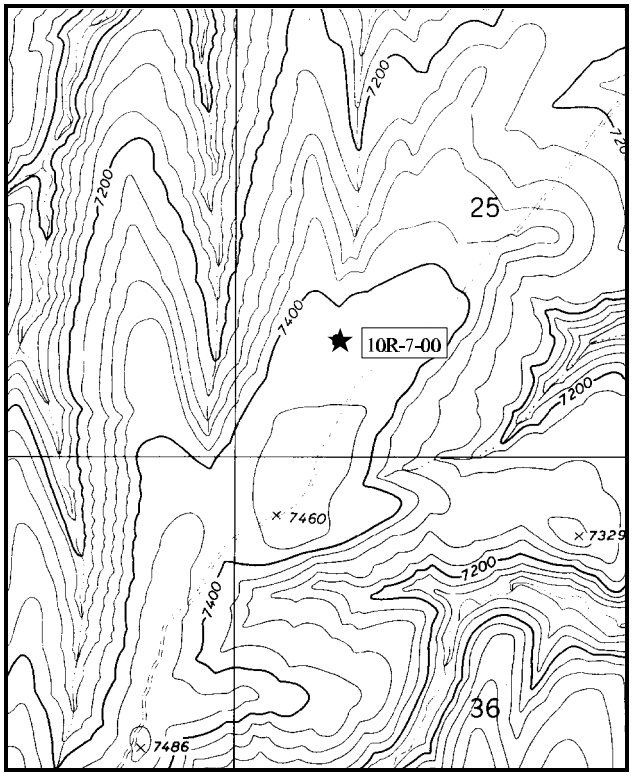
Study site name: Monument Ridge . Range type: Chained-Burn

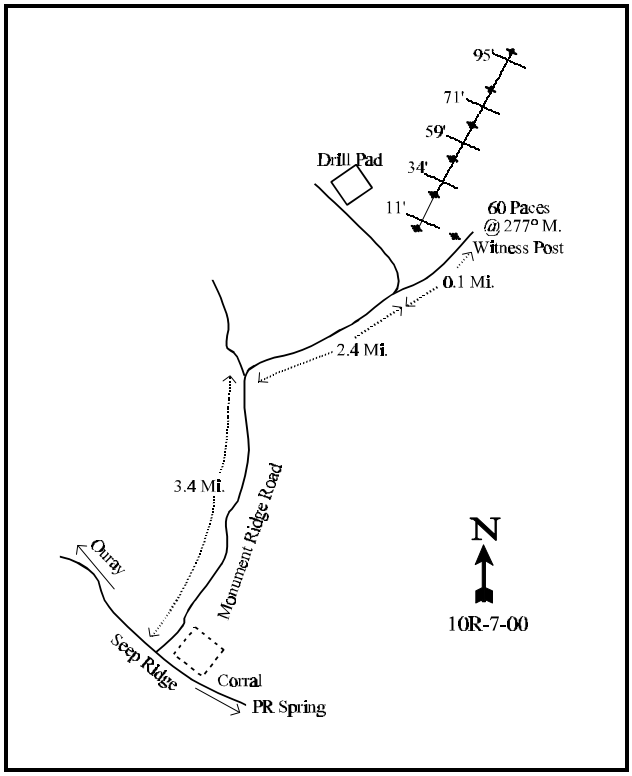
Compass bearing: frequency baseline 27°M.

Footmark (first frame placement) 5 feet. Frequency belt placement; line 1 (11ft), line 2 (34ft), line 3 (59ft), line 4 (71ft), line 5 (95ft).

LOCATION DESCRIPTION

From Seep Ridge Road turn north onto Monument Ridge Road. Drive 3.8 miles to a fork. Take the right fork and travel 1.9 miles to a turnoff to a drill pad. Go straight past this turnoff 0.1 miles to a witness post on the left (north) side of the road. From the witness post walk 60 paces at 27°M to the 0-foot stake. The study is marked by green, steel fencepost approximately 12-18 inches in height. The 0' stake is marked with browse tag #88 DWR.





Map name: Seep Canyon . Diagrammatic Sketch

Township 14 S, Range 23 E, Section 25 UTM. 4380795.547 N, 646308.262 E

DISCUSSION

Trend Study 10R-7

The Monument Ridge study is located about 2½ miles from the Monument Ridge Road at the head of Monument Canyon which drains into Sweetwater Canyon. The area was chained and seeded in the 1960's. In the 1980's, a wild fire burned through the area removing the most of chaining debris. Pinyon and juniper trees are becoming reestablished. The study area is almost level and about ½ mile wide, with canyons sloping off to the east and west. A drill pad is located to the southwest of the site. The area is used heavily by elk in the fall and spring. Pellet group data from 1997 estimated 166 elk days use/acre and 20 cow days use/acre (410 edu/ha and 50 cdu/ha). In 2000, elk use was significantly lower at 72 days use/acre (178 edu/ha). No cattle use was noted, although deer use was estimated at 11 days use/acre (27 ddu/ha). This area is within the Sweetwater allotment which permits cattle grazing from June through September on a deferred rest rotation basis.

Soil at the site is moderately shallow with an average effective rooting depth (see methods) of about 14 inches. A rocky layer is found about 6 inches below the soil surface. The deepest soil measurements are characteristically associated with the stumps of dead juniper and pinyon trees, while areas of bare soil are indicative of very shallow soils (2-3 inches) above bed rock. Erosion is not a problem on the site due to the gentle terrain combined with the adequate vegetation and litter cover.

Preferred browse are limited to a few scattered mountain big sagebrush, mountain mahogany, and rubber rabbitbrush. The dominant browse species is the increaser broom snakeweed. This species had an estimated density of 15,900 plants/acre in 1997 and 14,320 in 2000. Age structure shows a mostly mature population. Although broom snakeweed is quite dense, it is small averaging only 4 to 5 inches in height. Pinyon and juniper trees are scattered over the site at an estimated density of 14 trees/acre in 2000. Average diameter of pinyon is on one inch, while that of juniper is not quite two inches.

Most of the vegetative cover is contributed by crested wheatgrass. It currently (‘00) provides 98% of the grass cover, 67% of the herbaceous cover, and 60% of the total vegetation cover. Several other grasses occur on the site in small numbers. Forbs are diverse but only a few species are abundant. Tufted milkvetch (A*stragalus spatulatus*) currently (‘00) accounts for 78% of the forb cover. Scarlet globemallow is the next most abundant forb, although it had a cover value of less than 1%.

1997 APPARENT TREND ASSESSMENT

This site was chained in the 1960's and subsequently burned in the 1980's. The study is located on a level area. This combined with adequate protective cover is enough to prevent erosion. The soil is moderately shallow and in some places does not allow vegetation to become establish. The deepest soil is found near the stumps of burned juniper and pinyon. The dominant browse species is broom snakeweed. Although the density is estimated at 15,900 plants/acre, these plants are very small averaging only 5 inches in height and crown. Mountain big sagebrush is present, but in low numbers. Not many seedlings were found for any browse species. Herbaceous cover is dominated by crested wheatgrass. This species offers good forage and supplies most of the protective ground cover. Other native perennial grasses are present, but in low abundance. The dominate forb is tufted milkvetch with other forbs providing very little cover.

2000 TREND ASSESSMENT

Trend for soil appears stable. Percent cover of bare ground increased but percent litter cover is similar to 1997 estimates and vegetative cover increased. Due to the levelness of the site, combined with the good protective ground cover, erosion is not a problem. Trend for browse is stable but in poor condition due to a lack of

preferred shrubs combined with the abundance of the increaser, broom snakeweed. Trend for the herbaceous understory is down slightly. Sum of nested frequency of both grasses and forbs declined slightly since 1997. In addition, nested frequency of crested wheatgrass and several forb species declined significantly. This trend will probably reverse itself with a return to normal precipitation patterns.

TREND ASSESSMENT
soil - stable (3)
browse - stable but in poor condition (3)
herbaceous understory - down slightly (2)

HERBACEOUS TRENDS --
Herd unit 10R, Study no: 7

Type	Species	Nested Frequency		Quadrat Frequency		Average Cover %	
		'97	'00	'97	'00	'97	'00
G	Agropyron cristatum	444	*405	99	99	12.07	16.14
G	Agropyron dasystachyum	5	2	3	1	.01	.03
G	Bouteloua gracilis	5	-	3	-	.04	-
G	Carex spp.	13	20	5	8	.24	.30
G	Oryzopsis hymenoides	6	2	3	1	.06	.03
G	Poa fendleriana	22	*-	9	-	.19	-
G	Poa secunda	3	1	2	1	.01	.00
G	Stipa comata	5	-	1	-	.03	-
Total for Annual Grasses		0	0	0	0	0	0
Total for Perennial Grasses		503	430	125	110	12.67	16.52
Total for Grasses		503	430	125	110	12.67	16.52
F	Antennaria rosea	2	*13	2	7	.01	.08
F	Arabis spp.	37	*17	20	8	.12	.06
F	Artemisia dracunculus	5	*26	3	10	.09	.61
F	Arenaria fendleri	-	5	-	1	-	.03
F	Astragalus spatulatus	155	162	58	55	2.37	5.93
F	Aster spp.	13	*-	4	-	.19	-
F	Cryptantha spp.	7	*-	4	-	.02	-
F	Descurainia pinnata (a)	3	-	2	-	.01	-
F	Erigeron spp.	46	*17	24	9	.45	.04
F	Hymenoxys acaulis	-	7	-	2	-	.01
F	Machaeranthera grindelioides	-	*9	-	5	-	.05
F	Penstemon pachyphyllus	28	28	16	13	.13	.41
F	Phlox longifolia	1	2	1	1	.00	.00
F	Schoencrambe linifolia	10	-	3	-	.04	-
F	Senecio multilobatus	-	3	-	2	-	.01

Type	Species	Nested Frequency '97	Nested Frequency '00	Quadrat Frequency '97	Quadrat Frequency '00	Average Cover % '97	Average Cover % '00
F	Sphaeralcea coccinea	106	*67	44	34	.74	.36
F	Taraxacum officinale	-	1	-	1	-	.00
F	Tragopogon dubius	-	3	-	1	-	.01
Total for Annual Forbs		3	0	2	0	0.00	0
Total for Perennial Forbs		410	360	179	149	4.18	7.65
Total for Forbs		413	360	181	149	4.19	7.65

* Indicates significant difference at % = 0.10

BROWSE TRENDS --
Herd unit 10R, Study no: 7

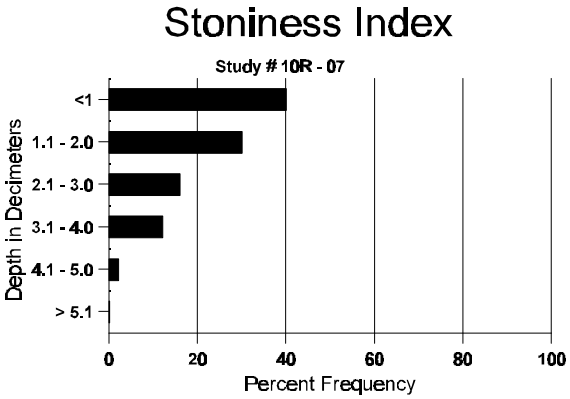
Type	Species	Strip Frequency '97	Strip Frequency '00	Average Cover % '97	Average Cover % '00
B	Artemisia frigida	14	24	.14	.09
B	Artemisia tridentata vaseyana	6	6	.18	.03
B	Cercocarpus montanus	3	2	-	-
B	Chrysothamnus depressus	1	0	.00	-
B	Chrysothamnus nauseosus hololeucus	1	5	.30	.76
B	Gutierrezia sarothrae	97	96	2.33	1.76
Total for Browse		122	133	2.96	2.65

BASIC COVER --
Herd unit 10R, Study no: 7

Cover Type	Nested Frequency '97	Nested Frequency '00	Average Cover % '97	Average Cover % '00
Vegetation	456	428	23.26	32.34
Rock	215	184	7.60	7.85
Pavement	341	216	8.05	1.02
Litter	494	414	24.22	23.26
Cryptogams	239	197	3.00	6.57
Bare Ground	354	423	13.55	26.27

SOIL ANALYSIS DATA --
Herd Unit 10R, Study no: 07

Effective rooting depth (inches)	Temp °F (depth)	PH	%sand	%silt	%clay	%0M	PPM P	PPM K	dS/m
13.5	58.8 (13.8)	7.0	40.0	35.4	24.6	3.54	5.0	115.2	3.3



PELLET GROUP FREQUENCY --
Herd unit 10R, Study no: 7

Type	Quadrat Frequency	
	'97	'00
Rabbit	1	10
Elk	53	65
Deer	2	5
Cattle	1	1

Pellet Transect			
Pellet Groups per Acre		Days Use per Acre (ha)	
'97	'00	'97	'00
-	35	-	N/A
2157	931	166 (410)	72 (177)
-	148	-	11 (29)
235	-	20 (49)	-

BROWSE CHARACTERISTICS --
Herd unit 10R, Study no: 7

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Artemisia frigida																		
S	97	2	-	-	-	-	-	-	-	-	2	-	-	-	40			2
	00	2	-	-	-	-	-	-	-	-	2	-	-	-	40			2
Y	97	8	-	-	-	-	-	-	-	-	8	-	-	-	160			8
	00	13	-	-	-	-	-	-	-	-	13	-	-	-	260			13
M	97	10	-	-	-	-	-	-	-	-	10	-	-	-	200	7	8	10
	00	16	-	-	1	-	-	-	-	-	17	-	-	-	340	3	5	17
D	97	1	-	-	-	-	-	-	-	-	-	-	-	1	20			1
	00	1	-	-	-	-	-	-	-	-	-	-	-	1	20			1

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'97	00%	00%	05%	+39%
'00	00%	00%	03%	

Total Plants/Acre (excluding Dead & Seedlings)				
'97	380	Dec:		5%
'00	620			3%

Artemisia tridentata vaseyana																		
S	97	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
Y	97	3	-	-	-	-	-	-	-	-	3	-	-	-	60			3
	00	2	-	-	1	-	-	-	-	-	3	-	-	-	60			3
M	97	1	2	-	-	-	-	-	-	-	3	-	-	-	60	15	22	3
	00	-	4	-	-	-	1	-	-	-	5	-	-	-	100	13	21	5

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'97	33%	00%	00%	+25%
'00	50%	13%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
'97	120	Dec:		-
'00	160			-

Cercocarpus montanus																		
M	97	-	-	2	-	-	-	-	-	-	2	-	-	-	40	23	37	2
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0	39	43	0
D	97	-	-	-	-	-	1	-	-	-	1	-	-	-	20			1
	00	-	-	-	-	1	1	-	-	-	-	1	-	1	40			2

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'97	00%	100%	00%	-33%
'00	50%	50%	50%	

Total Plants/Acre (excluding Dead & Seedlings)				
'97	60	Dec:		33%
'00	40			100%

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Chrysothamnus depressus																		
M	97	1	-	-	-	-	-	-	-	-	1	-	-	-	20	-	-	1
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
% Plants Showing		'97		Moderate Use 00%			Heavy Use 00%			Poor Vigor 00%					%Change			
		'00		00%			00%			00%								
Total Plants/Acre (excluding Dead & Seedlings)													'97		20	Dec:		-
													'00		0			-
Chrysothamnus nauseosus hololeucus																		
Y	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	00	4	-	-	-	-	-	-	-	-	4	-	-	-	80			4
M	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0	15	20	0
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0	24	33	0
D	97	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
	00	1	-	-	-	-	-	1	-	-	1	-	-	1	40			2
% Plants Showing		'97		Moderate Use 00%			Heavy Use 00%			Poor Vigor 00%					%Change +83%			
		'00		00%			00%			17%								
Total Plants/Acre (excluding Dead & Seedlings)													'97		20	Dec:		100%
													'00		120			33%
Gutierrezia sarothrae																		
S	97	7	-	-	-	-	-	-	-	-	7	-	-	-	140			7
	00	9	-	-	-	-	-	-	-	-	9	-	-	-	180			9
Y	97	155	-	-	-	-	-	-	-	-	155	-	-	-	3100			155
	00	106	-	-	3	-	-	-	-	-	109	-	-	-	2180			109
M	97	640	-	-	-	-	-	-	-	-	640	-	-	-	12800	5	5	640
	00	580	-	-	-	-	-	-	-	-	580	-	-	-	11600	4	5	580
D	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	00	26	-	-	1	-	-	-	-	-	14	-	-	13	540			27
X	97	-	-	-	-	-	-	-	-	-	-	-	-	-	420			21
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	580			29
% Plants Showing		'97		Moderate Use 00%			Heavy Use 00%			Poor Vigor 00%					%Change -10%			
		'00		00%			00%			02%								
Total Plants/Acre (excluding Dead & Seedlings)													'97		15900	Dec:		0%
													'00		14320			4%